

What is claimed is:

1. A radiation solid-state detector which has a charge storing section for storing the charges of the quantity corresponding to the dose of the radiation which has been projected, and records radiation image information as a static latent image in said charge storing section,

wherein a first electrode layer having permeability to radiation for recording or light emitted by excitation on the radiation,

10 a photoconductive layer for recording which exhibits conductivity when irradiated with said radiation for recording or said light,

15 a photoconductive layer for reading which exhibits conductivity when irradiated with an electromagnetic wave for reading, and

a second electrode layer having permeability to said electromagnetic wave for reading, are provided in this order,

and a first conductive member for outputting an electric signal corresponding to the quantity of the latent image charges stored in said charge storing section formed between said photoconductive layer for recording and said photoconductive layer for reading is provided in said second electrode layer or between said first electrode layer and said second electrode layer.

25 2. A radiation solid-state detector according to claim 1, wherein said first conductive member is provided at a location in said photoconductive layer for recording which is close to

100
said photoconductive layer for reading.

3. A radiation solid-state detector according to claim 1,
wherein said first conductive member is provided on the face
of said photoconductive layer for recording which is for said
5 photoconductive layer for reading.

4. A radiation solid-state detector according to claim 1,
wherein said first conductive member is provided in said second
electrode layer.

5. A radiation solid-state detector according to any one
10 of claims 1 to 4, wherein a second conductive member for causing
said latent image charges to have the same potential is
discretely provided in said charge storing section for each pixel
for an image represented by said electric signal.

6. A radiation solid-state detector according to any one
15 of claims 1 to 5, wherein a charge transporting layer which acts
roughly as an insulator for said latent image charges, and
roughly as a conductor for charges opposite in polarity to the
latent image charges is provided between said photoconductive
layer for recording and said photoconductive layer for reading,
20 and the charge transporting layer forms said charge storing
section.

7. A radiation solid-state detector according to any one
of claims 1 to 5, wherein a trap layer for catching said latent
image charges is provided between said photoconductive layer
25 for recording and said photoconductive layer for reading, and
the trap layer forms said charge storing section.

8. A radiation solid-state detector according to any one

of claims 1 to 7, wherein the electrode constituting said second electrode layer and/or said first conductive member is a stripe electrode comprising a number of linear electrodes.

9. A radiation solid-state detector according to any one of claims 1 to 7, wherein the electrode constituting said second electrode layer and said first conductive member is a stripe electrode comprising a number of linear electrodes, and

the linear electrodes of said first conductive member are disposed so that they are opposed to or almost orthogonally intersect the linear electrodes of the electrode constituting said second electrode layer.

10. A radiation image recording method which projects radiation onto the radiation solid-state detector according to any one of claims 1 to 9 to store the charges of the quantity corresponding to the dose of the projected radiation in the charge storing section of said radiation solid-state detector as latent image charges for recording of radiation image information as a static latent image in said charge storing section,

20 wherein a control voltage to adjust the electric field formed
between both electrode layers by a DC voltage applied across
the first electrode layer and the second electrode layer in said
radiation solid-state detector is applied to said first
conductive member.

25 11. A radiation image reading method which, from the
radiation solid-state detector according to any one of claims
1 to 9 in which radiation image information has been recorded

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as a static latent image, reads out said radiation image information,

wherein the charges corresponding to the latent image charges stored in the charge storing section of said radiation solid-state detector are read out through said first conductive member to provide an electric signal at a level corresponding to the quantity of said latent image charges.

12. A radiation image recording device which projects radiation onto the radiation solid-state detector according to any one of claims 1 to 9 to store the charges of the quantity corresponding to the dose of the projected radiation in the charge storing section of said radiation solid-state detector as latent image charges for recording of radiation image information as a static latent image in said charge storing section, comprising:

.. voltage application means which applies a DC voltage across the first electrode layer and the second electrode layer in said radiation solid-state detector, and

control voltage application means for applying, to said first conductive member, a control voltage to adjust the electric field formed between both electrode layers by a DC voltage applied by said voltage application means.

13. A radiation image reading device which, from the radiation solid-state detector according to any one of claims 1 to 9 in which radiation image information has been recorded as a static latent image, reads out said radiation image information, comprising:

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image signal acquisition means which, by reading out the charges corresponding to the latent image charges stored in the charge storing section of said radiation solid-state detector through said first conductive member, provides an electric signal at a level corresponding to the quantity of said latent image charges.

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